

Application No.: 09/742,684

Attorney Docket No.: SALK1720-6

Filing Date: December 19, 2000

(088802-3109)

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Remarks

In accordance with the present invention, there are provided novel methods of screening compounds for binding to novel receptors that are members of a new superfamily of receptor proteins having three distinct domains: an extracellular, ligand-binding domain; a hydrophobic, trans-membrane domain; and an intracellular, receptor domain having serine kinase-like activity. Also provided are bioassays for identifying agonists or antagonists for these receptors. Compounds identified by invention methods are useful, for example, for the therapeutic management of carcinogenesis, wound healing, and disorders of the immune, reproductive, or central nervous systems.

Claims 11-13 were pending before this communication. By the present communication, claim 11 has been amended, and new claims 18-36 have been added to define Applicants' invention with greater particularity. In addition, non-elected claims 12 and 13 have been cancelled without prejudice. These amendments and new claims add no new matter as they are fully supported by the specification and the original claims.

Accordingly, Claims 11 and 18-36 are currently pending in this application. The present status of all claims in the application is provided in the listing of claims presented herein beginning on page 2.

The rejection of claim 11 under 35 U.S.C. § 112, second paragraph, as allegedly being indefinite, is respectfully traversed. Applicants respectfully submit that claim 11 as drafted is clear to one of skill in the art in light of the specification. However, in efforts to advance prosecution and reduce the issues, claim 11 has been amended to address the three specific concerns of the Examiner (see Office Action, Paper No. 18, at page 4, paragraph 6). Applicants note that the amendments submitted herewith conform to the language used to characterize the invention receptor in issued claims of the parent applications (U.S. Patent Nos. 5,885,794 and 6,162,896).

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With respect to the use of the phrases "a novel receptor protein" and "serine kinase-like activity", both of these phrases have been deleted from amended claim 11. Accordingly, the rejection of claim 11 because of the use of these phrases has been rendered moot.

In response to the Examiner's assertion that the method is allegedly unclear "because there is no requirement of using a receptor of activin/TGF- $\beta$  superfamily" in the claimed method (see Office Action, Paper No. 18, at page 4-5, bridging paragraph), claim 11 has been amended to specify the use of a vertebrate activin receptor in the binding assay.

Therefore, Applicants submit that amended claim 11 fully meets the requirements of 35 U.S.C. § 112, second paragraph. Accordingly, Applicants respectfully request reconsideration and withdrawal of this rejection.

The rejection of claim 11 under 35 U.S.C. § 102(b), as allegedly being anticipated by Kondo *et al.*, *Biochem. Biophys. Res. Commun.* 161:1267-1272, 1989 (hereinafter referred to as "Kondo"), is respectfully traversed. The present claims, as defined by amended claim 11, require the use, in the claimed methods, of a specific vertebrate activin receptor encoded by nucleotide sequences hybridizing to specific nucleotide regions of SEQ ID NO:15, which is identified in the present application as a new member of the activin family of receptors. In contrast, Kondo merely discloses the binding of activinA to an uncharacterized receptor in cultured cells. Thus, Kondo only shows the existence of a receptor that has activinA-binding activity on cultured cells, but does not isolate, sequence, or further characterize any such receptor. Therefore, Kondo does not teach or suggest a method for screening a collection of compounds employing a vertebrate activin receptor as claimed. Accordingly, Applicants respectfully request reconsideration and withdrawal of this rejection of claim 11 under 35 U.S.C. § 102(b).

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The objection to claim 11 as allegedly encompassing non-elected subject matter is respectfully traversed. The method of claim 11, as amended, comprises employing a vertebrate activin receptor in a competitive binding assay. Accordingly, the objection has been rendered moot by the amendments submitted herewith.

**Conclusion**

In view of the above amendment and remarks, prompt and favorable action on all claims is respectfully requested. In the event any matters remain to be resolved in view of this communication, the Examiner is encouraged to call the undersigned so that a prompt disposition of this application can be achieved.

Respectfully submitted,

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